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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,754	09/10/2003	Jeffrey L. Specht	11254-18	3470

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BRINKS HOFER GILSON & LIONE  
P.O. BOX 10395  
CHICAGO, IL 60610

EXAMINER
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LERNER, MARTIN

ART UNIT	PAPER NUMBER
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2626

MAIL DATE	DELIVERY MODE
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11/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/659,754

Applicant(s)

SPECHT, JEFFREY L.

Examiner

Martin Lerner

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 to 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

### **DETAILED ACTION**

1. The instant application contains the following number of claims:

Number of independent claims: 3

Number of total claims: 21

Number of elected independent claims: 3

Number of total elected claims: 21

### ***Drawings***

2. The drawings are objected to because they are informal due to the presence of handwritten numerals. Applicant should submit formal drawings for Figures 1 to 5.

In Figure 1B, reference numeral 22 needs to be revised, as there is already a reference numeral 22 in Figure 1A, which represents a different element.

In Figure 5, reference numeral 310 is not illustrated, but is described by the Specification, at Page 9, Line 29.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office Action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings

Art Unit: 2626

for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, Applicant will be notified and informed of any required corrective action in the next Office Action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

On page 6, line 22, "A user could the" is not grammatical.

On page 6, line 27, "in order to mobile with the user" is not grammatical.

On page 7, line 18, "microphone 168" should be "microphone 164". (Figure 3)

On page 9, line 26, "todigital" should be "to-digital".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2626

5. Claims 1 to 5, 7 to 8, and 10 to 18 are rejected under 35 U.S.C. 102(e) as being anticipated by *Resnick*.

Regarding independent claims 1, 10, and 16, *Resnick* discloses a method and apparatus for communication privacy, comprising:

“a communication device having an audio input device adapted to capture a voice sound of a user” – a microphone 1 or acoustic sensor captures the operator’s speech (column 3, lines 26 to 42: Figure 1); one microphone 11 is integrated for a communications device (column 4, lines 7 to 15: Figure 2);

“a voice masking signal generator in communication with the audio input device and adapted to generate a masking signal capable of interfering with the ability of others in the area of the communications device to readily discern the voice sound of the user, the masking signal being at least partially derived from the voice sounds” – active acoustic silencing provides speech privacy for the operator of communications equipment such as all types of telephones, transmitting radios, and the like; the invention also reduces distracting noise from the operator’s speech for the people in the adjacent area (“capable of interfering with the ability of others in the area of the communications device to readily discern the voice sound of the user”) (column 1, line 64 to column 2, line 6); a silencing software routine 27 on a DSP performs operations to modify an amplified sound signal from a user’s voice into a silencing signal by inverting, mirroring, or shifting phase of signal 27 (“the masking signal being at least partially derived from the voice sounds”) (column 4, line 44 to column 5, line 4: Figures 3 and 4);

“at least one speaker in communication with the masking signal generator, the at least one speaker adapted to emit the masking signal” – a silencing loudspeaker 12 is designed to preferably focus the sound waves towards the operator's mouth to create a complement to the dispersion pattern of the human mouth; the loudspeaker 12 may be a variety of designs to produce a sound pressure level field that cancels the operator's voice (column 4, lines 32 to 43: Figure 2).

Regarding claims 2 to 4, 12 to 13, and 17, *Resnick* discloses that the invention relates to active silencing of conversations being conducted by communications equipment such as telephones and transmitting radios (“a radio”), where examples include cellular telephones (“a wireless telephone”) (column 1, lines 5 to 23); in a second embodiment, the invention takes the form of a handset 38 (or headset) plugging into the communications device 37 as an add-on for communications accessories; examples include “hands free headsets” (column 5, lines 27 to 31: Figure 7).

Regarding claims 5, 14, and 18, *Resnick* discloses a silencing software routine 27 on a DSP performs operations to modify the signal into a silencing signal by inverting, mirroring, or shifting phase of signal 27 (column 4, lines 56 to column 5, line 4: Figure 4); inverting, mirroring, or phase shifting the original speech signal to create the silencing signal involves “re-mixed portions of the inputted voice sounds”.

Regarding claim 7, *Resnick* discloses a further enhancement, where signal processing circuitry analyzes the speech signal to create a combined residual signal that is white noise; the masking signal spectrum is found by subtracting the residual

Art Unit: 2626

signal spectrum from a Gaussian spectrum of a preset level; the resulting masking signal is added to the silencing signal after equalization (column 8, lines 41 to 59: Figure 16); the additional masking signal derived from an analysis of the speech signal to produce a residual signal that is white noise added to the silencing signal represents "other sounds" mixed with the masking signal from "portions of the inputted voice sounds".

Regarding claims 8 and 11, *Resnick* discloses application to multi-occupant rooms such as office cubicle spaces ("an office environment" or "an open office environment") (column 1, lines 14 to 19).

Regarding claim 15, *Resnick* discloses that silencing loudspeaker 12 is integrated into a handset 20 of a telephone ("connected . . . as a one piece element") (column 4, lines 7 to 21: Figure 2).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6 and 19 to 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Resnick* in view of *Wildi*.

Concerning claims 6 and 19, *Resnick* discloses a silencing signal that is produced by inverting and shifting phase of the speech signal (column 3, lines 26 to 38:

Art Unit: 2626

Figure 1), but omits generating a masking signal from time-delayed portions of the inputted voice sounds. However, *Wildi* teaches a sound masking method and system, where an original signal is delayed to produce a time-delayed signal, which is amplified and emitted so that the original sound signal will combine with the amplified time-delayed signal to produce a substantially unintelligible sound. (Abstract: Figure 2) The objective is to mask conversation or voice signals in open landscape offices or other areas where people congregate and where speech privacy is desirable. (Column 1, Lines 4 to 11) It would have been obvious to one having ordinary skill in the art to produce a masking signal from a time-delayed portion of the original speech signal as taught by *Wildi* in a method and apparatus for communication privacy of *Resnick* for a purpose of masking conversations in an open landscape office environment where speech privacy is desirable.

Concerning claim 20, *Resnick* discloses a further enhancement, where signal processing circuitry analyzes the speech signal to create a combined residual signal that is white noise; the masking signal spectrum is found by subtracting the residual signal spectrum from a Gaussian spectrum of a preset level; the resulting masking signal is added to the silencing signal after equalization (column 8, lines 41 to 59: Figure 16); the additional masking signal derived from an analysis of the speech signal to produce a residual signal that is white noise added to the silencing signal represents "other sounds" mixed with the masking signal from "portions of the inputted voice sounds".



Concerning claim 21, *Resnick* discloses that signal processor 22 modifies a pre-amplified signal to create a silencing signal using a digital signal processor (column 4, line 44 to column 5, line 4: Figures 4 and 5); implicitly, a speech signal processed by a speech signal processor "is generated in substantially real-time" to meet the need to create the silencing signal that cancels the speech at the same time that the user is speaking.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Resnick* in view of *Johansson*.

*Resnick* discloses an embodiment involving a cellular telephone or cordless telephone connected by wires (column 5, lines 27 to 50: Figure 7), and an embodiment where there is no electrical connection between the communications device and the invention (column 6, lines 24 to 47: Figure 9). It is unclear whether the embodiment includes a speaker connected by a wireless connection to the sound processing circuitry, although wireless connections are suggested by a cellular or cordless telephone. However, it is a well known and obvious expedient for hands-free telephones to utilize a wireless speaker in an earpiece. Specifically, *Johansson* teaches a wireless headset from a modular unit for purposes of enhancing operator convenience and use. (Column 2, Lines 25 to 64) It would have been obvious to one having ordinary skill in the art to add a feature of a wireless connection to a speaker as suggested by *Johansson* from the silencing signal processing circuitry of *Resnick* for a purpose of enhancing operator convenience.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Hillis et al. ('028) discloses related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

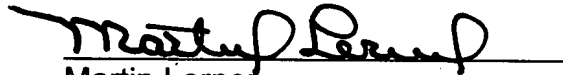
Application/Control Number: 10/659,754

Page 10

Art Unit: 2626

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML  
10/31/07

A handwritten signature in black ink, appearing to read "Martin Lerner", written over a horizontal line.

Martin Lerner  
Examiner  
Group Art Unit 2626